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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,651	01/27/2004	Ronald A. Beyerinck	PC23195B	4574

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EXAMINER	
SASAN, ARADHANA	
ART UNIT	PAPER NUMBER
1615	

MAIL DATE	DELIVERY MODE
10/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,651	BEYERINCK ET AL.	
	Examiner	Art Unit	
	ARADHANA SASAN	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-26,30,34-37 and 39-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-26,30,34-37 and 39-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. The remarks and amendments filed on 06/05/2009 are acknowledged.

2. Claims 1-21, 27-29, 31-33 and 38 were cancelled.

3. Claims 35 and 40-43 were amended.

4. Claims 22-26, 30, 34-37 and 39-43 are included in the prosecution.

Response to Arguments

Rejection of claims 35 and 40-43 under 35 USC § 112, second paragraph

5. In light of Applicant's amendments of claims 35 and 40-43, the rejection with respect to these claims has been withdrawn.

Double Patenting Rejection of claims 22-26, 30, 34-37 and 39-43

6. In light of the terminal disclaimer (filed 06/05/09) against US Patent No. 6,973,741, the double patenting rejection has been withdrawn.

MAINTAINED REJECTIONS:

The following is a list of maintained rejections:

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 22-26, 30, 34-37, and 39-43 **remain** rejected under 35 U.S.C. 102(a) as being anticipated by Babcock et al. (US 2001/0053791 A1).

12. Claims 22-26, 30, 34-37, and 39-43 **remain** rejected under 35 U.S.C. 102(e) as being anticipated by Babcock et al. (US 2001/0053791 A1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The claimed invention is a composition comprising a plurality of solid amorphous dispersion particles comprising a substantially amorphous drug and a polymer selected from the group consisting of hydroxypropyl methyl cellulose acetate succinate, hydroxypropyl methyl cellulose phthalate, cellulose acetate phthalate, cellulose acetate trimellitate, polyvinyl alcohols that have at least a portion of their repeat units in hydrolyzed form, polyvinyl pyrrolidone, poloxamers, and blends thereof. The particles have an average diameter of at least 40 μm and a bulk specific volume of less than 5 mL/g. At least 80 vol % of the particles have diameters of greater than 10 μm. The particles are formed by a spray drying process, the process comprising the steps (a) forming a feed solution comprising the drug, the polymer, and a solvent " in which both the drug and the polymer are soluble; (b) directing the feed solution to a spray-drying

apparatus; (c) atomizing the feed solution into droplets in the spray-drying apparatus; and (d) contacting the droplets with a drying gas to form the particles.

Babcock teaches spray drying as a process that breaks up liquid mixtures into small droplets (atomization) and rapidly removing solvent from the mixtures in a vessel such as a spray-drying apparatus where there is a strong driving force for evaporation of solvent from the droplets (Page 6, [0063]). "In the case of spray-drying, the droplets generally dry prior to impinging on a surface, thus forming particles of solid amorphous dispersion on the order of 1 to 200 micrometers in diameter … For example, a solution of drug and a dispersion polymer such as HPMCAS in acetone may be suitably spray-dried by spraying the solution at a temperature of 50.degree. C. (the vapor pressure of acetone at 50º C is about 0.8 atm) into a chamber held at 0.01 to 0.2 atm total pressure by connecting the outlet to a vacuum pump. Alternatively, such a solution may be sprayed into a chamber where it is mixed with nitrogen gas at a temperature of 80ºC to 250ºC and pressure of 1.0 to 1.2 atm" (Pages 6-7, [0063]).

Regarding instant claim 22, the limitation of a composition comprising a plurality of solid amorphous dispersion particles comprising a substantially amorphous drug and a polymer selected from the group consisting of hydroxypropyl methyl cellulose acetate succinate, hydroxypropyl methyl cellulose phthalate, cellulose acetate phthalate, cellulose acetate trimellitate, polyvinyl alcohols that have at least a portion of their repeat units in hydrolyzed form, polyvinyl pyrrolidone, poloxamers, and blends thereof is anticipated by the particles of solid amorphous dispersion comprising a drug and a dispersion polymer such as HPMCAS, as taught by Babcock (Pages 6-7, [0063]). The

limitation of the particles having an average diameter of at least 40 μm and the limitation of at least 80 vol % of the particles having diameters of greater than 10 μm are anticipated by the particles that are on the order of 1 to 200 micrometers in diameter, as taught by Babcock (Pages 6-7, [0063]). The limitation a bulk specific volume of less than 5 mL/g is a property of the particles that is inseparable from the particles. Babcock teaches the components of the composition (the drug, the polymer, and the solvent), the particle size (1-200μm), and the process by which the particles are prepared (preparing a solution of the drug and polymer in the solvent, spray-drying the solution). Therefore, the bulk specific volume (which is calculated by dividing a known volume of particles by the weight of the particles) is anticipated by the teaching of Babcock, absent any evidence of criticality. The limitations of the spray drying process are anticipated by the spray drying process taught by Babcock (Pages 6-7, [0063]).

Regarding instant claim 23, the limitation of at least 90 vol % of the particles having diameters of greater than 10μm is anticipated by the particles that are on the order of 1 to 200 micrometers in diameter, as taught by Babcock (Pages 6-7, [0063]).

Regarding instant claim 24, the limitation of the particles having an average diameter of at least 50μm is anticipated by the particles that are on the order of 1 to 200 micrometers in diameter, as taught by Babcock (Pages 6-7, [0063]).

Regarding instant claim 25, the limitation of a bulk specific volume of less than 4 mL/g is a property of the particles that is inseparable from the particles. Babcock teaches the components of the composition (the drug, the polymer, and the solvent), the particle size (1-200μm), and the process by which the particles are prepared (preparing

a solution of the drug and polymer in the solvent, spray-drying the solution) (Pages 6-7, [0062] – [0063] and Page 9, [0086]). Therefore, the bulk specific volume (which is calculated by dividing a known volume of particles by the weight of the particles) is anticipated by the teaching of Babcock, absent any evidence of criticality.

Regarding instant claim 26, the limitation of the drug is anticipated by the glycogen phosphorylase inhibitor taught by Babcock (Page 1, [0001] – [0002]).

Regarding instant claim 30, the limitation of the hydroxypropyl methyl cellulose acetate succinate is anticipated by the hydroxypropyl methyl cellulose acetate succinate (HPMCAS) taught by Babcock (Page 5, [0050] and Pages 6-7, [0063]).

Regarding instant claim 34, the limitation of the polymer that is present in an amount sufficient such that the solid amorphous dispersion, following administration to an *in vivo* or *in vitro* use environment, provides concentration enhancement of the drug in the use environment relative to a control composition consisting essentially of an equivalent amount of the drug alone is anticipated by combining Drug A (a GPI (glycogen phosphorylase inhibitor)) with sufficient amount of concentration-enhancing polymer to meet the *in vivo* or *in vitro* requirements, as taught by Babcock (Page 11, [0106]).

Regarding instant claim 35, the limitation of the composition providing a maximum drug concentration of the drug in the use environment that is at least about 1.25-fold that provided by the control composition is anticipated by the Cmax of Drug A that is at least 1.25-fold that of a control composition, as taught by Babcock (Page 1, [0004]).

Regarding instant claim 36, the limitation of the composition providing in the use environment an area under the drug concentration versus time curve for any 90- minute period from the time of introduction to about 270 minutes following introduction to the use environment that is at least 1.25-fold that provided by the control composition is anticipated by an in vitro dissolution test reflected by a plot of dissolved Drug A concentration versus time the compositions of the present invention provide an Area Under the Curve (AUC) for any period of at least 90 minutes between the time of introduction into the use environment and about 270 minutes following introduction that is at least 1.25-fold that of a control composition comprising an equivalent quantity of Drug A alone, as taught by Babcock (Page 3, [0029]).

Regarding instant claim 37, the limitation of the composition providing a relative bioavailability of the drug that is at least 1.25-fold that of the control composition is anticipated by the relative bioavailability of Drug A is achieved that is at least 1.25 compared to a control of amorphous Drug A alone, as taught by Babcock (Page 11, [0106]).

Regarding instant claims 39-41, the limitations of the average droplet diameter, D_{10} and D_{90} are anticipated by the droplet size of 1-200μm, as taught by Babcock (Pages 6-7, [0063]). Babcock teaches the components of the composition (the drug, the polymer, and the solvent), the particle size (1-200μm), and the process by which the particles are prepared (preparing a solution of the drug and polymer in the solvent, spray-drying the solution). The average droplet diameter, $D_{10,}$ and D_{90} are properties that are inseparable from the droplets taught by Babcock, absent any evidence of

criticality. “Products of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. (MPEP 2112.01).

Regarding instant claims 42-43, the limitations of the span of the droplets are anticipated by the droplet size of 1-200μm, as taught by Babcock (Pages 6-7, [0063]). Babcock teaches the components of the composition (the drug, the polymer, and the solvent), the particle size (1-200μm), and the process by which the particles are prepared (preparing a solution of the drug and polymer in the solvent, spray-drying the solution). The span of the droplets is a property that is inseparable from the droplets taught by Babcock, absent any evidence of criticality. “Products of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. (MPEP 2112.01).

Response to Arguments

Rejection of claims 22-26, 30, 34-37, and 39-43 under 35 USC § 102(a) and (e)

7. Applicant’s arguments, see Page 5, filed 06/05/09, with respect to the rejection of claims 22-26, 30, 34-37 and 39-43 under 35 USC § 102(a) and (e) as being anticipated by Babcock et al. (US 2001/0053791 A1) have been fully considered but are not persuasive.

Applicant argues that while the Examiner is correct that Babcock discloses solid amorphous dispersions of a drug and a concentration-enhancing polymer, Babcock's dispersions do not comprise particles with average diameters that are at least 40μm with at least 80 vol% of the particles having diameters greater than 10μm. Rather, Babcock broadly discloses that the solid amorphous dispersion particles that can range from 1 to 200μm Babcock, paragraph [0063]. Babcock also teaches that "In many cases, spray-drying conditions are chosen that require the droplets be less than about 20 to 50μm in diameter," Ibid, paragraph [0082], and that suitable nozzles for forming the droplets include fountain nozzles, flat-fan nozzles, and two-fluid nozzles.

Applicant argues that as shown in Table 9 of the instant application, the Control C2 composition that is the same composition as Example 2 of Babcock, had an average particle diameter of 20 μm, which is one-half the minimum average particle diameter of 40 μm recited in independent claim 22.

This is not persuasive because the teaching of a prior art reference is not limited to the exemplified embodiments. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). MPEP 2123.

Babcock teaches the solid amorphous dispersion particles in the range of from 1 to 200 μm, and encompassed within this range is the instantly claimed range of at least 40 μm. Babcock's disclosure of droplets that are less than about 20 to 50 μm in diameter also includes a droplet diameter of less than 40 μm, which meets the instantly

claimed particle diameter limitation. Babcock teaches the components of the composition (the drug, the polymer, and the solvent), the particle size (1-200μm), and the process by which the particles are prepared (preparing a solution of the drug and polymer in the solvent, spray-drying the solution). The average droplet diameter is a property that is inseparable from the droplets taught by Babcock. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. (MPEP 2112.01).

Therefore, the rejection of 03/04/09 is maintained.

Conclusion

8. No claims are allowed.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax, can be reached at 571-272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/
Examiner, Art Unit 1615

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